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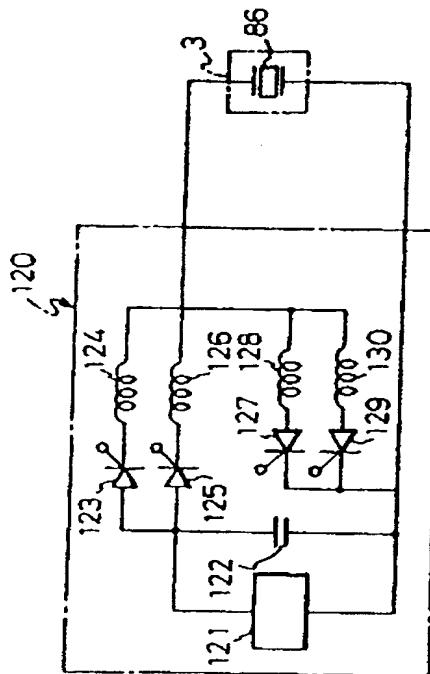
APPLICATION DATE : 28-04-89  
 APPLICATION NUMBER : 01107803

APPLICANT : TOYOTA MOTOR CORP;

INVENTOR : MITSUYASU MASAKI;

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TITLE : FUEL INJECTION CONTROL DEVICE  
 OF INTERNAL COMBUSTION ENGINE



**ABSTRACT :** PURPOSE: To reduce noise emitted from a fuel injection valve by controlling the charging/discharging time of a piezo element for fuel injection in accordance with the engine speed and engine load, and prolonging that time at least while the engine is in low-speed load operation.

CONSTITUTION: An electronic control device determines the fuel injection amount in accordance with the revolving speed of an engine and the load thereon, to control the charging/discharging time for a piezo element 86 of a fuel injection valve 3. While the engine is out of low-speed, low-load operation, the fuel pressure in a pressure accumulating chamber is raised, and charge/discharge of the piezo element 86 is controlled by No.1 charging and No.1 discharging thyristor 123, 127 so that the rate of fuel injection rises and falls steeply. When the engine is in low-speed, low-load operation, on the other hand, the fuel pressure in the pressure accumulating chamber is sunk, and charge/discharge of the piezo element 86 is controlled by No.2 charge controlling and No.2 discharging thyristor 125, 129 through No.2 discharging and No.2 charging coils 130, 126 which both have a large inductance so that the rate of fuel injection rises and falls mildly. Thus, noise from fuel injection valve can be reduced.

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